

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Steven Wilson <randyw@crl.com>
Subject: [2738] 2SC373 Gain/voltage
Message-ID: <Pine.SUN.3.91.950822144527.22622B-100000@crl8.crl.com>

Anyone had a data book on 2SC373's. What is the Beta ? Vce ?
thanks

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: adam@philadelphia.libertynet.org (Adam O'Donnell)
Subject: [2713] 40 / 30 meter(s) rigs.
Message-ID: <9508220223.AA27180@philadelphia.libertynet.org>

Try this idea on for size:

IF - 1.5 mhz
VFO - 8.5 mhz

Input: 7mhz
 $8.5\text{mhz} - 7.0\text{mhz} = 1.5\text{mhz IF}$

Input: 10mhz
 $10\text{mhz} - 8.5\text{mhz} = 1.5\text{mhz IF}$

Do you get the idea? Or am I just mad... mad you say? Surely you jest...
(how could they know? My shrink is sworn to secrecy... isn't he? They all
know... don't they! They're all out to get me...)

I think I could whip together some plans for a 40meter/30meter radio, or
at least the receiver.

72

--
Adam O'Donnell, N3RCS
Amsat: N3RCS@AMSAT.ORG
Internet: ADAM@LIBERTYNET.ORG

"I want to know how God created this world. I am not interested in this or
that phenomenon. I want to know His thoughts, the rest are details."

-- Albert Einstein

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Bing WB2SXN <ADMINH10%CLVM.BITNET@CUNYVM.CUNY.EDU>
Subject: [2720] 5 watts
Message-ID: <"omnigate.c.756:22.07.95.13.11.35"@clarkson.edu>

I haven't heard much on this list about 624 kits but i have built some of their stuff and it is real nice and they have 5w rigs, both dc and superhet - and also advertise a 5w final on a board that could be put in a small rig as the board is very small - don't have their address here at work but can get it for anyone that is interested - 73

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: bcutter@teal.csn.net (Bob Cutter)
Subject: [2730] Colorado 14'er Event Sunday
Message-ID: <199508221717.LAA03759@uucp-1.csn.net>

Once again the Colorado 14'er event is here. For those of you not familiar, it is primarily VHF/UHF and the object is to put stations on as many of the 50+ 14,000 foot+ plus peaks as possible and work as many other stations and peaks as possible. Because of afternoon thunderstorms the operation is limited to 9:00AM to Noon, local(1500-1800Z), Sunday, August 27, 1995.

I will be on Mt. Lincoln at 14,286 feet and on 147.54 and 446.0. In addition I will be on 7040 +/- with the NorCal 40A.

A net control will be on Pikes Peak at 147.45 and contacts are often made over several hundred miles.

72, Bob KI0G
END

Bob Cutter,Glenwood Springs, CO

KI0G

bcutter@teal.csn.net

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: rgobrick@public.compusult.nf.ca (Robert J. Gobrick)
Subject: [2707] EA8YU Souped Up SW30
Message-ID: <199508220021.VAA28272@public.compusult.nf.ca>

Goran and QRP-L Gang,

I'm sure this slipped by a few people, but a few weeks ago Goran reported on the progress of his SW30 and he noted at the time that he "souped up" his rig (by the way Nils where does the term "souped up" come from - is that an American Campbell soup term?) with an RIT, Curtis Keyer and A Super-Simple SWR Indicator that appears in the June 1995 issue of QST. This little design by Tony Brock-Fisher K1KP uses two small LED's for a go/no-go SWR indicator - it looks simple and neat and besides hearing a little more from Goran on this I'm wondering if anyone else on the net has built this little gem?

Let's keep those eyes and ears open for these little tidbits that pass us by on the qrp-l list.

73/72 Bob V01DRB/WA6ERB

>
>This evnig I got my first SW30 contacts: PT7 (599), G3 (339), ON(339)
>The G3 and ON stations are behind the mountain so I really did not hope
>to work them.
>
>Please listen for me tonight at 02z near 10.106
>
>73 Goran ea8yu
>
>

```
-----  
| Bob Gobrick - V01DRB/WA6ERB/VE2DRB - Newfoundland, Canada |  
| QRPer Galore - ARCI, GQRP, NORCAL, NEQRP, COQRP, MIQRP, NWQRP |  
| Internet: rgobrick@public.compusult.nf.ca |  
| bgobrick@terra.nl.net.nf.ca |  
| Compuserve: 70466.1405@compuserve.com |  
-----
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From qrp-l@lehigh.edu Tue Aug 22 19:35:00 1995
From: kd7s@valleynet.com (Bill Jones)
Subject: [2714] Ground Loops
Message-ID: <199508212323.QAA11938@sierra.valleynet.com>

I have been studying a direct conversion receiver design by Roy Lewallen, W7EL, in which he places special emphasis on bringing all ground points for a high gain amplifier stage to a common point. The stated reason is to reduce the possibility of the stage breaking into self-oscillation. While I have seen the same caution in other articles, I do not understand the

principles involved.

I am curious to know whether multiple stages of amplification should share a single, common grounding point. If so, it would put some rather severe constraints on PC board layout. Would building a high gain amplifier over a ground plane (using double sided material with the components on the solid, un-etched side) help or hinder?

Could someone shed some light on this for me? Thank you.

=====

Bill Jones - KD7S
Sanger, California
Reply to kd7s@valleynet.com

=====

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: gmarcus <gmarcus@tmdeccsmtp.redstone.army.mil>
Subject: [2728] HF Regenerative Receiver
Message-ID: <9507228091.AA809110684@tmdeccsmtp.redstone.army.mil>

Recently there was a thread on this list that referred to a very simple regenerative receiver for HF. I believe a schematic was posted that was generated in ASCII. Unfortunately, I missed this posting. Would someone on the list be kind enough to re-post it or forward it to me?

OJ di dit

Gene w3pm@amsat.org

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: mack@mails.imed.com
Subject: [2722] How to calculate power
Message-ID: <9507228091.AA809105861@mails.imed.com>

To the gent looking for how to measure power with an oscilloscope:

Your problem is in missing one of the formulas. You are right that power equals voltage squared divided by resistance. What they didn't tell you is that the voltage in that formula is RMS AC voltage.

Here's how you do it #1: Measure the zero-peak voltage and multiply by 0.707. This is RMS. now use the above formula.

Here's how to do it #2: Measure the peak-peak voltage and divide by 1.414 (the square root of 2! actually). This is RMS and a heck of a lot easier to measure with a scope to my mind (peak to peak that is).

Now for the obligatory " are you SURE you want to do this" part of all Internet replies:

The problem you are most likely to have in this scheme is using a scope that is not accurate at the frequency of interest. Be sure you use a scope rated to at least 100 MHz. A 20MHz scope will be somewhat inaccurate starting about 7 MHz (It's a EE thing). A 100MHz scope should be accurate up to about 30 MHz. In case you are interested, this is the same reason that HI-FI audio amps go all the way out to 20 KHz when there is really very little sound above about 8Khz. You need the extra response to make the part you really want work right.

The other problem is getting better than about 1 or 2 digits of accuracy in your measurements. Scopes just aren't very good for precision measurements. However, It WILL be able to let you resolve 1 watt vs 2 watts with about 10% accuracy.

Good luck with your calibration. If I can be of further assistance, don't hesitate to e-mail me.

Ray Mack
WD5IFS
mack@mails.imed.com

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: adam@philadelphia.libertynet.org (Adam O'Donnell)
Subject: [2712] L vs Pi networks
Message-ID: <9508220218.AA27967@philadelphia.libertynet.org>

Would someone please give me the rundown on the differences in L networks and Pi networks used in interstage matching of receivers? What are the differences? What are the bandwidth considerations?

72

--
Adam O'Donnell, N3RCS

Amsat: N3RCS@AMSAT.ORG
Internet: ADAM@LIBERTYNET.ORG

"I want to know how God created this world. I am not interested in this or that phenomenon. I want to know His thoughts, the rest are details."

-- Albert Einstein

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: rac@usa.net
Subject: [2723] L vs Pi networks
Message-ID: <199508221345.HAA25568@mail.usa.net>

>Would someone please give me the rundown on the differences in L
networks
>and Pi networks used in interstage matching of receivers? What are
the
>differences? What are the bandwidth considerations?

Adam,

Pi and L networks both work well in matching circuits. The pi network can have a wide range of loaded Q values while the L network has a loaded Q that is determined by the square root of the impedances being matched. As a first approximation the loaded Q of an L network would equal:

$$\sqrt{Z_{hi}/Z_{low}}$$

The bandwidth is an inverse function of Q. Higher the Q, narrower the bandwidth. Generally, losses are proportional to Q. Higher the (loaded) Q, higher the losses, all other things being equal.

Hope this helps.

-73-

-Lee WA3FIY-

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: "michael (w.m.) babineau" <babineau@bnr.ca>
Subject: [2727] Matching a 30m Hamstick

Message-ID: <"29060 Tue Aug 22 10:33:33 1995"@bnr.ca>

Hi :

I have seen a fair bit of traffic regarding matching Hamsticks to 50ohm coax using a capacitor across the base of the antenna to ground.

Has anyone done this for a 30m Hamstick? I'm looking for a good guestimate at what capacitance value to try. (I really need to invest in an antenna analyzer). At the moment I'm guessing about 300pf based on comments people made of 470pf for a 40m and 100pf for 20m. I would appreciate any numbers that people have come up with based on experience. Also, what sort of voltage rating do I need on one of these capacitors for QRP power levels (ie could I use a small variable 360pf BC band tuning capacitor from a portable AM radio)?

I'm trying to minimize the amount of fiddling around to get this thing properly matched as I'm leaving on the weekend for vacation, and I'd rather not have to resort to doing the matching at the radio-end using my tuner.

Thanks,

Michael
VE3WMB

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: markem@primenet.com (Mark Monninger)
Subject: [2711] Measuring Power - Thanks
Message-ID: <199508220216.TAA28784@mailhost.primenet.com>

Thanks to all who replied to my query about calculating power based on scope voltage readings. Too many replies to thank individually.

Now to warm up the scope and give it another shot...

73... Mark AA7TA

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: "N100Q Tom R. @ MR01 22-Aug-1995 0910" <randolph@est.ENET.dec.com>
Subject: [2721] mixer input - how clean?
Message-ID: <9508221313.AA19688@us4rmc.pko.dec.com>

QRPers,

Here's a dumb question - how clean does the input to a mixer need to be? This comes up because I have a xtal oscillator that's going to be the BFO in a 40m rcvr I'm building (...slowly...). Its output somewhat approximates a sawtooth waveform. The word I got from perusing the QRP lit is that it doesn't matter that much, because harmonics will appear in the mixer due to the non-linearities there, anyway.

I can make a filter to clean it up easily enough, just thought I'd consult the group before I bothered about that...

-Tom R. N100Q randolph@est.enet.dec.com

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995

From: Paul Harden <pharden@aoc.nrao.edu>

Subject: [2735] NEXT SOLAR CYCLE BEGINS!

Message-ID: <199508222047.0AA06258@zia.aoc.nrao.edu>

NEXT SOLAR CYCLE BEGINS

There is not much an observatory has to offer ham radio, but this is too pertinent to ignore.

As we all know, we are sitting at dead bottom of the solar cycle ... a period of extreme solar "quiet" (minimum) conditions. From a communications standpoint, you plot solar activity (various indexes or sunspot counts) to determine when the next cycle begins, but this method identifies the next solar cycle months after the fact.

>From an astronomy and observational standpoint, there are two distinct conditions that identify the end of one cycle and the beginning of the next:

1. During a solar MINIMUM - sunspots are rare and when they do occur, are located along the sun's equator within +/- 7 degrees.
2. During a solar MAXIMUM - sunspots become numerous and are located at much higher latitudes on the solar disk, above 30 degrees.
3. The magnetic polarity of sunspots reverses from one cycle to the next.

The first sunspot above the equator since early 1994 was observed Saturday, August 12, 1995 at the Big Bear Solar Observatory, operated by Cal Tech. The sunspot was observed at 21 degrees north latitude and was of OPPOSITE magnetic polarity from all sunspots since 1984 ... identifying the start of the new solar cycle.

Thus, the next solar cycle began August 12, 1995, a bit ahead of most forecasts. This suggests that improved HF propagation could be evident as early as next spring and summer, depending upon the rate of increase in solar activity.

You heard it here first ... from the world's largest radio telescope
in Socorro, NM (humbly referred to as the *center of the universe*).

Good DX, Paul NA5N

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-----NATIONAL RADIO ASTRONOMY OBSERVATORY ----- Socorro, New Mexico -----
| VLA - Very Large Array Observatory - Worlds largest radio telescope |
| VLBA - Very Long Baseline Array      - even larger                  |
|------(pharden@zia.aoc.nrao.edu) --- (73 de NA5N) -----
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From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: CLATON.CADMUS@hamlink.mn.org (CLATON CADMUS)
Subject: [2715] NW8020
Message-ID: <809056832.AA03349@hamlink.mn.org>

There has been quite a few messages about the Roy Gregson 8020 4020 kits
and absense of the kits supplied by Dan's Small Parts.

I work at home and UPS picks up here everyday. I would be willing to be
a supplier of these and other items for the QRP community. Does Roy
have an E-mail address. I would like to contact him and see if an
arrangement can be made.

73 de Claton Cadmus, KA0GKC

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-----
| FIDOnet= Claton Cadmus 1:282/100 |
| INTERNet= Claton.Cadmus@hamlink.mn.org |
| PACKETnet= KA0GKC@WB0GDB.#STP.MN.USA.NA |
|-----
```

If anything I have written makes any cents, I claim copyright!
* TLX v4.10 * "Beam me aboard Scotty!" "Aye Capt'n, will a 2 by 4 do!"
* SLMR 2.1a *

---NoSnail v1.17

HAM>link< RBBS - Serving the Amateur Radio Community Since 1983

- 612/HAM-0000 v.34 Ham Radio Spoken Here!!
- 612/HAM-1010 v.32b Reply to sender @ hamlink.mn.org

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: adams@chuck.dallas.sgi.com (chuck adams)
Subject: [2734] OHR online
Message-ID: <199508222028.VAA00968@chuck.dallas.sgi.com>

Gang,

Just talked to Dick Witzke, KE8KL, at Oak Hills Research.

You know them as OHR (abbreviations the regulars use on this list) so you should have no problems using his email address at

ohrqrp@aol.com

Dick is trying this for 30 days to check out the information highway. He gave me his permission to announce this address to the group. He will not be online constantly, but will check a couple times per day for email. Remember gang, he is in business and has other things to do like the rest of us the major portion of his day.

Don't put him in overload, please. I have an OHR-400 to build this week or next and would like to be able to find him. :-)
This project not a rush or even started until I straighten out the US Postal Service. That alone is a big job. :-)

OK, this was qrp related. Back to your regularly scheduled program.

dit dit

--

Chuck Adams (K5FO CP-60) adams@sgi.com
Box 181150, Dallas, TX 75218-8150

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: "rohre" <rohre@arlut.utexas.edu>
Subject: [2731] One concept of ground loops
Message-ID: <n1403022554.71921@msmailgw1.arlut.utexas.edu>

Comments on the designs to avoid ground loops lead me to this oversimplified concept that may convey the problem:

consider two circuits having gain elements, which would be active amplifying stages. Let each be represented by a rectangle lying on its side. In series with the lines of the rectangles' upper sides, will be some "lump" of gain.

As long as the two rectangles are not touching or overlapping, but are side by side, everything is fine; as the current of circuit 1, goes around, and its return path at the bottom of its rectangle is not in contact with the bottom of the other rectangle, which is the return current path for circuit 2. That would be the case without ground loops.

Now what if to save on the amount of "line" used, we draw the two rectangles overlapping, and if one is taller than the other, the only part in common is the bottom lines, and they effectively become one line where the overlap happens. Now, we see that return current from circuit one can go by a path that is only circuit one, but also, some of it might get into the path of rectangle "circuit 2" and go around it and appear in that circuit to cause problems. If the current of circuit 1 is quite large, and the combined return path is small, we might see the return current of the large current circuit fluctuating and causing an effect on the current in circuit 2, because of effects of heating from the current of circuit 1 upon the resistance path of the common return. Thus, there are more than one way to have a problem from return currents that have more than one path. The larger current has a voltage drop along the length of the return circuit. Thus, the return circuit is not one equi-voltage plane such as one desires for a ground or common reference. The point at which a ground is made to the mixed circuit becomes critical because this voltage varies along the ground conductor.

The purpose then of controlling the ground return to the case of a circuit, or to a single point on the ground plane of a circuit board is to prevent the sharing of the return path by multiple currents overlapping along the ground path as in the case of our two rectangles.

You pick a large enough conductor like the shield of a coax that will still be a low resistance and minimum voltage drop along its length carrying all the currents to the case, or you have a confined single point ground return, so the return currents of one stage are restricted from passing thru nearby stages before reaching the ground point. The case is hopefully large enough for all currents in it to share a low impedance return path, if it is all metal.

Another concept of the ground loop is if the grounds of a circuits components go by individual connections to the copper common area of a board, you create a series of those overlapping rectangles, and varying currents in the copper ground plane, again leading to the voltage drops that can play havoc with the various paths. In this instance, one circuit might be involved, but it might consist of the grounded components in the input side, (say the base circuit of a transistor), interacting with the larger ground currents from components on the output side(Collector) of the same transistor of the grounded emitter type of circuit.

I am not sure how clear the above may be, and comments and expansions are welcomed.

72,

Stuart K5KVH

rohre@arlut.utexas.edu

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995

From: mack@mails.imed.com

Subject: [2724] OOPS!!!!!! More on power

Message-ID: <9507228091.AA809106463@mails.imed.com>

I just read another reply to the scope measured power question and realized I GAVE THE WRONG equation!!!!

You multiply by 0.707 for zero to peak and MULTIPLY by 1.414 for peak to peak.

Boy, do I feel foolish. And I get paid to do this!

Ray Mack

WD5IFS

mack@mails.imed.com

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995

From: Mike Robinson <miker@cc.com>

Subject: [2706] QRP parts

Message-ID: <9508212352.AA15528@voder.nsc.com>

+++++
+++++
+++ BIG NEWS !!! New parts house. +++
+++++
+++++

I have a friend that has opened an electronics shop designed to cater to hams. He wants to become the new "Dan's Small Parts..."

He is still building his inventory but will go all out to find parts for our needs. Give him a try.

I gave him "Dan's" parts list so he could see
what is in demand.

Randy's Electronics Supply
2236 W. 1st Ave.
Loveland, CO 80538
970-635-9656

```
=====
7.3 de Michael aa0ub          | QRP:
miker@cc.com                 |      "This thing's a radio?"
=====
Take a look at:
  http://www.townhall.com/
  http://www.acs.oakland.edu/oak/SimTel/msdos/hamradio.html
=====
```

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Bill Acito 22-Aug-1995 1032 <acito@asdg.ENERG.dec.com>
Subject: [2725] QRP-ARCI?
Message-ID: <9508221432.AA12769@us1rmc.bb.dec.com>

Would someone post the current subscription/membership info for
ARCI?

b

. - I own my own words -

Bill Acito |d|i|g|i|t|a|l|
acito@asdg.enet.dec.com
Digital Equipment Corporation, Hudson, MA

kc1gs
qrp-ne 260
norcal 1147
arrl life

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Mike Robinson <miker@cc.com>

Subject: [2732] Randy's Electronics
Message-ID: <9508222010.AA04717@voder.nsc.com>

Correction to Randy's address:

Randy's Electronics Supply
2236 W. 1st St.
Loveland, CO 80537
970-635-9656

It seems the printer in Loveland
that did his business cards
had much better than a 50/50 chance
and still couldn't get it right.
There's only one zip code in
Loveland and only one 1st St.

```
=====
7.3 de Michael aa0ub          | QRP:
miker@cc.com                 Norcal #857 | "This thing's a radio?"
=====
Take a look at:
http://www.acs.oakland.edu/oak/SimTel/msdos/hamradio.html
=====
```

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: adam@philadelphia.libertynet.org (Adam O'Donnell)
Subject: [2710] September 73
Message-ID: <9508220216.AA27917@philadelphia.libertynet.org>

I just bought the september issue of 73.

Quick rundown:

10 Meter JPole
Loop receiving antenna
10 Meter Discone
SWR Meter Checker
LF ELF VLF DXing

And for QRP:

WB8VGE Reviews the TenTec TKit DC Receiver. Hot Diggidy Damn.

72

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Adam O'Donnell, N3RCS
Amsat: N3RCS@AMSAT.ORG
Internet: ADAM@LIBERTYNET.ORG

"I want to know how God created this world. I am not interested in this or that phenomenon. I want to know His thoughts, the rest are details."

-- Albert Einstein

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: cebik@UTKVVX.UTCC.UTK.EDU
Subject: [2716] Re: 40 / 30 meter(s) rigs.
Message-ID: <Pine.PMDF.3.91.950822064006.545371343A-100000@utkvx.utk.edu>

On Mon, 21 Aug 1995, Adam O'Donnell wrote:

> IF - 1.5 mhz
> VFO - 8.5 mhz
> Input: 7mhz
> 8.5mhz - 7.0mhz = 1.5mhz IF
> Input: 10mhz
> 10mhz - 8.5mhz = 1.5mhz IF

Since the higher the frequency of a VFO, the more difficult to tame, why not the other way around: 1.5 MHz VFO and 8.5 MHz IF. 9 MHz IF cans might be padded to 8.5, and 8 MHz cans might be modified. Good mixer output filtration would be a must, since 1.5 MHz is cutting it fine for bleed through. But AM broadcast might also bleed through the other scheme. Would be interested in the results of either scheme.

-73-

LB, W4RNL

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Goran Hosinsky <hosinsky@royac.iac.es>
Subject: [2719] Re: EA8YU Souped Up SW30
Message-ID: <9508221307.AA04547@royac8.royac.iac.es>

Bob and the gang:

Last night 30 meters was bad in the US direction from the Canary Islands, the QRO crowd came in at 559 on my old ts 520. I was not able to make any contact with the sw30

The SWR meter by K1KP is really a gem. Two leds, one showing forward power, really not necessary but nice to see that something comes out, one showing reflected power with varying intensity depending on the power, goes out when swr goes towards 1:1.

SWR meter, keyer, RIT and reverse voltage protection all fit on a 3"x4" board, same size as the SW30. Stacking the two boards with the controls on the lid of the box and two pushbuttons for paddles (just learning to squeeze key them left handed) makes a compact rig. You could even put button type NICADs in the bottom and then you would only need antenna and earphones external.

ATU: I am using an L-network with choke balun on the input. Roller coil and one variable capacitor, using a crocodile clamp to connect the capacitor at the input or output side of the coil depending on type of impedance to be matched. Just about as simple as one can make it. What about making a really mini-size tuner using L network with switched fixed capacitors and coils in binary series. Such an ATU could go directly into the SW30 box, very compact. But has anyone idea of what resolution is needed in C and L (i.e. minimum step value) and what maximum total values would be needed. Could dip switched be used? (you would need a pen to do the switching but you need that anyhow for logging).

73

Goran ea8yu hosinsky@royac.iac.es

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: rgobrick@public.compuserve.com (Robert J. Gobrick)
Subject: [2717] Re: Ground Loops
Message-ID: <199508221237.KAA04857@public.compuserve.com>

Bill,

I am anxious to see the answers you get here - would you be so kind as to recap the private answers you get on this for the rest of us. I think this grounding problem is one of the biggest bug-a-boos in the construction of little rigs. I have had circuits break into oscillation and I'm sure it's because I've tried to squeeze too much gain out of a component (LM-386 amp) and a feedback loop developed because of grounding.

I also raised the question a year ago about running separate ground wires

from the pc board to chassis connectors. Some folks knowing that this is a problem only recommend ONE good ground connection from the pc board to metal chassis connectors (via a minicoax shield antenna connection as an example).

For a point in reference - Dave Benson NN1G in his new Small Wonder Lab enclosure - SW24 for the SW40 rigs isolates the mounting of the pc board from the chassis by using 4 nylon standoffs and only uses one ground strap (actually the minicoax shield) from the pc board to the metal enclosure chassis. I know that this mounting method helped me minimize some rf feedback problems I was having with another NE4040 rig which I mounted using lots of ground wires. Dave mentioned to me that the NE4040 and NE3040 pcboards have a small groundplane so it was prudent to watch for feedback loops. I'm sure a double-sided board with multiple plated through holes connecting the two ground planes would help the situation.

Anyway Bill, an interesting topic and I don't care what the experts say I find this phase of construction technique more of an art than science.

Keep us informed on what you hear.

73/72 Bob V01DRB/WA6ERB

>I have been studying a direct conversion receiver design by Roy Lewallen, >W7EL, in which he places special emphasis on bringing all ground points for >a high gain amplifier stage to a common point. The stated reason is to >reduce the possibility of the stage breaking into self-oscillation. While >I have seen the same caution in other articles, I do not understand the >principles involved.

>

>I am curious to know whether multiple stages of amplification should share a >single, common grounding point. If so, it would put some rather severe >constraints on PC board layout. Would building a high gain amplifier over a >ground plane (using double sided material with the components on the solid, >un-etched side) help or hinder?

>

>Could someone shed some light on this for me? Thank you.

>=====

>Bill Jones - KD7S

>Sanger, California

>Reply to kd7s@valleynet.com

>=====

>

>

>

|-----|
| Bob Gobrick V01DRB/WA6ERB/VE2DRB Newfoundland, Canada |

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| QRPer Galore - QRP ARCI, GQRP, NORCAL, NEQRP, COQRP, MIQRP, NWQRP |
| Internet:      bgobrick@terra.nlnet.nf.ca |
|               rgobrick@public.compuserve.nf.ca |
| Compuserve:   70466.1405@compuserve.com |
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From qrp-l@lehigh.edu Tue Aug 22 19:35:00 1995
From: "Paul J. Piercey (V01HE)" <ppiercey@nlnet.nf.ca>
Subject: [2740] Re: Memberships
Message-ID: <9508222259.AA26502@terra.nlnet.nf.ca>

> > Reply-to: pharden@aoc.nrao.edu
> > From: Paul Harden <pharden@aoc.nrao.edu>
> > To: Multiple recipients of list <qrp-l@lehigh.edu>
> > Subject: Re: Memberships
> > Date: Mon, 21 Aug 1995 15:23:32 EDT

> QRP clubs do NOT issue expiration notices. One must remember these
> QRP organizations are operated strictly by VOLUNTEERS. There is
> enough work to impose on the volunteers without asking them to process
> expiration forms, never mind the printing costs of the forms and
> postage. This is why everyone gets such neat journals for \$10 or so
> a year.
>

Might I suggest inserting a slip of paper or somesuch with

It's time to renew your membership!!

on it in the newsletter or magazine before the renewal month of the
member. This is something that we are going to try with our Club. It
takes a little bit of effort but a good database will spit out the
names of the members and their renewal dates. Those who stuff the
envelopes could just add that little reminder. Might work. :)

=====

Paul J. Piercey
V01HE

V01HE@V01AAA.#ENF.NF.CAN.NA
ppiercey@nlnet.nf.ca

=====

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Paul Harden <pharden@aoc.nrao.edu>
Subject: [2726] Re: mixer input - how clean?
Message-ID: <199508221455.IAA05382@zia.aoc.nrao.edu>

Tom,

That's a good question. As you pointed out, it will cause images due to the harmonic content. Being a sawtooth wave and not a sine wave might also cause a lot of phase noise in the detector, which will just appear as an increased level of "hiss" in the audio. If too loud, it could also serve to charge up (bias) the AGC a bit with no signal, but no real detrimental effect.

You need to also figure out eventually why you are generating a sawtooth wave. If the BFO is a transistor oscillator, sounds like you might have the base biased a bit too high; if a crystal, it might be operating at the parallel resonant frequency point ... sometimes called the zero-pole crossing point. A small cap, say 20pF across the crystal, might clean it up if indeed the crystal is appearing highly inductive.

Let us know how your homebrew rig is coming along.

Paul NA5N

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Raymond.Anderson@Eng.Sun.COM (Ray Anderson)
Subject: [2736] Re: mixer input - how clean?
Message-ID: <9508222044.AA02039@radium.Eng.Sun.COM>

> From qrp-1@lehigh.edu Tue Aug 22 06:23:23 1995
> Reply-To: randolph@est.ENET.dec.com
> QRPers,
> Here's a dumb question - how clean does the input to a mixer need to be?
> This comes up because I have a xtal oscillator that's going to be the BFO
> in a 40m rcvr I'm building (...slowly...). Its output somewhat approximates
> a sawtooth waveform. The word I got from perusing the QRP lit is that it
> doesn't matter that much, because harmonics will appear in the mixer due to
> the non-linearities there, anyway.
> I can make a filter to clean it up easily enough, just thought I'd consult
> the group before I bothered about that...
> -Tom R. N100Q randolph@est.enet.dec.com
>

I guess the answer depends on a couple of things:

What kind of mixer are you using? A diode DBM (like a SBL-1 or similar) or a dual gate fet or a differential amp with current source injection (like a NE602A).

Diode mixers function best when their diodes are turned completely on and off (hard switching). Studies have shown that square waves are actually the preferred drive waveform for DBMs.

Other mixer types may have other requirements. Active mixers usually have gain associated with the LO input port and tend to square-up the drive internally.

Probably the most important thing to consider is how clean from a phase noise standpoint the input is rather than sweating the harmonic content.

Also, inadequate bandwidth in your oscilloscope can distort the signal you are observing and make a square wave appear 'sawtooth-ish'.

72 de WB6TPU, Ray

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: "John D. Spittle" <jds@freenet.vancouver.bc.ca>
Subject: [2718] Re: Neophyte Receiver
Message-ID: <Pine.3.89.9508180708.A26672-0100000@freenet.vancouver.bc.ca>

I can't resist adding a few further words.....

The Neophyte was, of course the first "building block" in what later became the Epiphyte SSB transceiver. To start with, add a second NE602 mixer, a 455KHz resonator and filter; you've then got a great little superhet receiver! You will never have to worry about lack of audio.

72 & have fun Derry VE7QK

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: rgobrick@public.compuserve.com (Robert J. Gobrick)
Subject: [2739] Re: NEXT SOLAR CYCLE BEGINS!
Message-ID: <199508222241.UAA21402@public.compuserve.com>

Paul,

GREAT NEWS - boy I better get that SB-220 1KW linear out of the closet...

(That's not probably the response you were looking for :^)

73 Bob V01DRB/WA6ERB

>NEXT SOLAR CYCLE BEGINS

>

>You heard it here first ... from the world's largest radio telescope
>in Socorro, NM (humbly referred to as the *center of the universe*).

>

>Good DX, Paul NA5N

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| Bob Gobrick - V01DRB/WA6ERB/VE2DRB - Newfoundland, Canada |  
| QRP'er Galore - ARCI, GQRP, NORCAL, NEQRP, COQRP, MIQRP, NWQRP |  
| Internet:      rgobrick@public.compuserve.nf.ca |  
|                bgobrick@terra.nl.net.nf.ca |  
| Compuserve:   70466.1405@compuserve.com |  
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From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995

From: Paul Harden <pharden@aoc.nrao.edu>

Subject: [2741] Re: NEXT SOLAR CYCLE BEGINS!

Message-ID: <199508222300.RAA17631@zia.aoc.nrao.edu>

That's right, Bob. Break out those 1kW amps and by golly we'll
make those bands sound better whether they are or not!

Paul NA5N

fwoof fwoof (2 solar flares!)

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995

From: n2elw@ix.netcom.com (Larry Makoski)

Subject: [2708] Re: The Amateur's Code - Or lack there of..

Message-ID: <199508220124.SAA11737@ix6.ix.netcom.com>

Boy, Stan.....

My heart goes out to you. I have never heard much profanity via CW on
the waves; but it doesn't surprise me! I think however that this is a
symptom which is endemic to our society as a whole not just Amateur
Radio.

As our lifestyle and pace goes ever faster and faster, a majority seem to have lost the concept of patience. If something is "foreign" and somehow just "not quite right", people seem to get frustrated and resort to either vulgarity or just plain meanness. The ability to gope and muddle through seems to be on the wane.

I guess that's why CW is my favorite mode. I like the fact that for the most part, CW ops seem to be a bit more patient and genteel. At least they used to be!

Happy pounding es 73
Larry N2ELW
n2elw@ix.netcom.com

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: Monte Stark <ku7y@sage.dri.edu>
Subject: [2709] Re: The Amateur's Code - Or lack there of..
Message-ID: <Pine.SUN.3.90.950821190130.1685A-1000000@vortex>

Hi Larry and All,

I think that this is so far away from what we usually hear on cw that it really isn't anything to get worked up about.

I've been doing cw since 1953 and have not heard more than a couple of people sending bad words. And that's chasing dx, contesting and rag chewing.

Somebody has to be down there at the bottom of the barrel, otherwise we might be there..... :-)

cul,

73, Ron,

.....KU7Y.....ARCI #8829.....Monte "Ron" Stark.....
...ku7y@sage.dri.edu.....Sun Valley, Nevada....
.....ARRL.....NorCal #330.....NRA LIFE.....

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: JCoote@aol.com
Subject: [2729] Re: The Amateur's Code - Or lack there of..

Message-ID: <950822111414_80441573@mail06.mail.aol.com>

My experience (assuming this thread is related to horrible lid experiences) was:

I was monitoring a local VHF repeater. There was a lull in the usual dinnertime babble. A young voice (sounding a little nervous maybe) broke in with the intent of starting a QSO. Immediately (though the repeater was dormant) some crotchety old repeater cop began reading the poor kid the riot act!

"You young kids are alla buncha dang fools... all no-coders.... why doncha all go back to CB land or MTV where y'all came from..... (ad nauseam).

The only thing the new ham did wrong was to be young, and try to have a first QSO on the repeater which seemed to have threatened Mr. Macho's "turf" somehow. Some welcome for a new ham on what was possibly their first QSO!!

I used to spend time in the field with a direction finder, defending my and other repeaters against jammers and bootleggers. An interesting thing I learned after some time in the field was that bad behavior is not restricted to license class, mode, religion, band, age, gender, income, geography, race..... Maybe jammers and lids are of the same mold (mould?) as some of the flammers and hackers found underneath the internet when you turn it over with a stick. A lot of behavioral similarities there.

Fortunately, these are a very small minority and most of us know what the "Amateur's Code", public service and Elmering mean.

My two cents worth... 72,
Jay
WB6AAM

From qrp-1@lehigh.edu Tue Aug 22 19:35:00 1995
From: RHenry3860@aol.com
Subject: [2737] Re: The Amateur's Code - Or lack there of..
Message-ID: <950822164149_80686674@mail06.mail.aol.com>

What I have learned in my short year and 3 months as a ham is that no coders really get the short end of the stick. They are completely discriminated against due to their lack of wanting to learn morse code. They also get blamed for everything, if someone hears a bozo on the repeater and a new call an hour later, it is automatically assumed that it was the new call doing to pirating.

In fact, what I have learned is that a lot of 2meter jammers are in fact

people with advanced and extra licenses which view 2m as nothing better than cb.

On the other hand, a lot of no code hams should be cbers again. We have a few here in cleveland that talk filthy and swear on the repeaters, as soon as they disagree with something someone says, f*** this and f*** that you a-hole, you know the story.

It seems learning code has kept these type of people off of the hf bands thankfully, but then again there are a lot of no coders that woule be an asset to hf.